



UNIVERSITY OF  
PORTSMOUTH

## COURSE SPECIFICATION

### *MEng Electronic Engineering*

**Academic Standards, Quality and Partnerships  
Department of Student and Academic Administration**

**June 2020**

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# COURSE SPECIFICATION

<b>Course Title</b>	<b>MEng Electronic Engineering</b>
Final Award	MEng
Exit Awards	CertHE, DipHE and BEng (Hons)
Course Code / UCAS code (if applicable)	H613/ C2175S
Mode of study	full time
Mode of delivery	Campus
Normal length of course	4 years, 5 years with placement
Cohort(s) to which this course specification applies	from September 2020 intake onwards
Awarding Body	University of Portsmouth
Teaching Institution	University of Portsmouth
Faculty	Faculty of Technology
School/Department/Subject Group	School of Energy and Electronic Engineering
School/Department/Subject Group webpage	<a href="https://www.port.ac.uk/about-us/structure-and-governance/organisational-structure/our-academic-structure/faculty-of-technology/school-of-energy-and-electronic-engineering">https://www.port.ac.uk/about-us/structure-and-governance/organisational-structure/our-academic-structure/faculty-of-technology/school-of-energy-and-electronic-engineering</a>
Course webpage including entry criteria	<a href="https://www.port.ac.uk/study/courses/meng-beng-electronic-engineering">https://www.port.ac.uk/study/courses/meng-beng-electronic-engineering</a>
Professional and/or Statutory Regulatory Body accreditations	The Institution of Engineering and Technology
<a href="#">Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level</a>	Level 7

This course specification provides a summary of the main features of the course, identifies the aims and learning outcomes of the course, the teaching, learning and assessment methods used by teaching staff, and the reference points used to inform the curriculum.

This information is therefore useful to potential students to help them choose the right course of study, to current students on the course and to staff teaching and administering the course.

Further detailed information on the individual modules within the course may be found in the relevant module descriptors and the Course Handbook provided to students on enrolment.

Please refer to the [Course and Module Catalogue](#) for further information on the course structure and modules.

## Educational aims of the course

The course aims to combine an understanding of analogue and digital electronics, control engineering, digital signal processing, sensors and microwave systems with a knowledge of modern theories, techniques and technologies; to produce fluent practically oriented graduates able to operate within academic, industrial and research professional environments; to produce graduates who understand business with excellent employability and interpersonal skills capable to self-manage, self-learn and communicate productively.

By providing a challenging and stimulating university environment, the course aims to provide a focussed and coherent programme of studies that is accredited by the Institution of Engineering and Technology (IET) which meets the full educational requirements leading to Chartered Engineer (CEng) status.

The course aims to allow students to flourish along three dimensions.

- The Electronic Engineer as a specialist who is a technical expert capable of solving complex technical problems. A core priority is that the scientific principles, theories and analyses introduced in lectures are widely applied in the physical world, through project-based learning, individual and group design projects and laboratory experiments. For this, the course contents and learning resources are continually updated to reflect the latest state-of-the-art technologies.
- The Electronic Engineer as integrator who can operate and manage across boundaries be they technical or organizational in a complex business environment. Students also develop an understanding of project management and planning, business contexts and the need to cope with uncertainty and risk. This experience is further enhanced by the one-year sandwich placement option. Opportunities like careers advice, professional development portfolios and records aim to develop a range of key skills to enhance students' understanding of the job market and to optimize their career potential.
- The Electronic Engineer as a change agent who provides the creativity, innovation and leadership to change the industry in an uncertain future. Project and problem based learning, the multidisciplinary group project and exercises/tutorials are used throughout the course to allow students to develop research-based solutions to a variety of technical and non-technical problems.
- The individual project brings together many strands of the course and challenges the student's technical and non-technical knowledge to solve a range of innovative problems.

The industrial placement, which can be taken after the completion of either the second or third year of the sandwich course is strongly recommended, and the School has a number of exchange arrangements that may provide overseas industrial placements. Upon completing the placement, the IET awards the EngTech qualifications depending upon the subject area of the placement subject to meeting the relevant IET requirements.

Successfully completing this MEng course will allow students to achieve the educational requirements for Chartered Engineer (CEng) status upon graduation. Students will also be awarded the EUR-ACE certificates meaning that they will fully meet the criteria of second cycle European engineering programmes. Completing this course will open up a wide range of employment opportunities in areas such as professional consumer electronics, terrestrial and satellite broadcasting, mobile communications, communication networks and project management.

## Course Learning Outcomes and Learning, Teaching and Assessment Strategies

The [Quality Assurance Agency for Higher Education \(QAA\)](#) sets out a national framework of qualification levels, and the associated standards of achievement are found in their [Framework for Higher Education Qualifications](#) document.

The Course Learning Outcomes for this course are outlined in the tables below.

**A. Knowledge and understanding of:**

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
A1	Analogue electronic, digital electronic, programmable microcontroller systems and related design techniques, control systems, communication systems, digital signal processing, sensors, microwave/RF (radio frequency) systems, software design, programming in high and low level languages	Lectures, seminars, laboratory work, group work and simulations.	Examinations, courseworks, practical assessments, project reports. Formative feedback is provided throughout to enable students to continually improve on their abilities.
A2	Appropriate mathematical methods	Lectures and tutorials.	Formative and summative Examinations and CBT assessments.
A3	The role of computing and simulation in the solution of problems, including hardware description languages	Lectures, seminars, laboratory work, group work and simulations.	Examinations, courseworks, practical assessments, project reports. Formative feedback is provided throughout to enable students to continually improve their abilities.
A4	Practical design of electronic, computer and software systems	Lectures, seminars, laboratory work, group work and simulations.	Courseworks, practical assessments, project reports. Formative feedback is provided throughout to enable students to continually improve their abilities.
A5	The business context of engineering: commercial, legal, contractual, professional and ethical responsibility and statutory frameworks	Lectures, seminars, laboratory work, group work and	Examinations, courseworks, practical assessments, project reports.

		individual project.	Formative feedback is provided throughout to enable students to continually improve on their abilities.
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**B. Cognitive (Intellectual or Thinking) skills, able to:**

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
B1	Select, acquire and apply appropriate knowledge of communications, electronic, software, computer and principles to model and analyse systems	lectures, seminars, laboratory work, group work and simulations.	Examinations, courseworks, practical assessments, project reports. Formative feedback is provided throughout to enable students to continually improve on their abilities.
B2	Select and apply appropriate mathematical methods to model, analyse, plan or program electronic systems	Lectures, seminars, laboratory work, group work and simulations.	Examinations, courseworks, practical assessments, project reports. Formative feedback is provided throughout to enable students to continually improve on their abilities.
B3	Select and apply computer-based design and simulation techniques	Laboratory work and simulations.	Courseworks and practical assessments.
B4	Design, build and test systems and subsystems to meet specified sometimes conflicting requirements. Solve problems in a systematic and manageable manner	lectures, seminars, laboratory work, group work and simulations.	Exams, courseworks and practical assessments.
B5	Assess electronic, software and computer systems from commercial and statutory viewpoints, including assessment of risks	Lectures, seminars, laboratory work and group work.	Exams and courseworks assessments.

**C. Practical (Professional or Subject) skills, able to:**

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
C1	Use standard and specialist laboratory instruments, conduct experiments and report on them	Laboratory work.	Portfolios, presentations and demonstrations.
C2	Use computer-based simulation, design and software development tools	Laboratory work and simulations.	Courseworks and practical demonstrations.
C3	Design, construct, test and evaluate electronic circuits and computer systems	Lectures, seminars, laboratory work, group work and simulations.	Examinations, courseworks, practical assessments, project reports. Formative feedback is provided throughout to enable students to continually improve on their abilities.
C4	Search a range of sources for information pertinent to technical and professional tasks	Laboratory work, group work and projects.	Courseworks and technical project reports.
C5	Plan, manage and undertake a range of engineering projects, taking into account constraints	Laboratory work, group work and projects.	Courseworks and technical project reports.

**D. Transferrable (Graduate and Employability) skills, able to:**

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
D1	Manipulate and present information	Laboratory work, group work and projects.	Courseworks, portfolios and project reports.
D2	Analyse scientific and technical information in the solution of problems	Laboratory work, group work and projects.	Courseworks, portfolios and project reports.
D3	Use information technology to handle text and data and for simulation and design	Lectures, laboratory work, group work and projects.	Courseworks, portfolios and project reports.
D4	Develop solutions in a creative manner, sometimes based on inadequate information	Laboratory work, group	Courseworks, portfolios and project reports.

		work and projects	
D5	Communicate effectively in a variety of formats and to work effectively as an individual and as part of a team to achieve goals	Lectures, seminars, laboratory work and group work.	Courseworks, portfolios, presentations and project reports.

## Academic Regulations

The current University of Portsmouth [Academic Regulations](#) will apply to this course. However, this course is accredited by the IET and some deviations from the regulations will apply.

## Support for Student Learning

The University of Portsmouth provides a comprehensive range of support services for students throughout their course, details of which are available at the [MyPort](#) student portal.

In addition to these University support services this course also provides:

- Extensive induction programme introduces students to the University and their course.
- Each student has a personal tutor, responsible for pastoral support and guidance.
- Industrial placement tutors
- Subject lecturers offer drop-in tutorial sessions every week for students to seek further support and guidance with their work.
- The School offers excellent experimental up-to-date facilities that are also available to students for extracurricular activities. These include:
  - The Digital Electronics and Microprocessor Laboratory
  - The Analogue Electronics Laboratory
  - The Control Engineering Laboratory
  - The Telecommunications and Digital Signal Processing Laboratory
  - The Computer Suites (Linux and Windows)
- The School offers student-led surgeries in the areas of electronics and computing.
- The School has an Industrial Liaison Officer whose particular role is to maintain contact with employers, although most staff maintain good industrial and research links.
- The Faculty Student Placement and Employability Centre (SPEC) office offers a wide range of guidance and support to students to enable them to secure placements.

## Evaluation and Enhancement of Standards and Quality in Learning and Teaching

The University of Portsmouth undertakes comprehensive monitoring, review and evaluation of courses within clearly assigned staff responsibilities. Student feedback is a key feature in these evaluations, as represented in our [Policy for Listening to and Responding to the Student Voice](#) where you can also find further information.

The course is accredited by the Institution of Engineering and Technology (IET) and meets all the educational requirements for professional registration for the Chartered Engineering status (CEng).

## Reference Points

The course and outcomes have been developed taking account of:

- [University of Portsmouth Curriculum Framework Specification](#)
- [University of Portsmouth Strategy](#)
- [University of Portsmouth Code of Practice for Work-based and Placement Learning](#)
- [Quality Assurance Agency UK Quality Code for Higher Education](#)
- [Quality Assurance Agency Qualification Characteristic Statements](#)
- [Quality Assurance Agency Subject Benchmark Statement for Engineering](#)
- [Quality Assurance Agency Framework for Higher Education Qualifications](#)
- Requirements of Professional and/or Statutory Regulatory Bodies: **The Institution of Engineering and Technology**
- Vocational and professional experience, scholarship and research expertise of the University of Portsmouth's academic members of staff
- National Occupational Standards

## Disclaimer

The University of Portsmouth has checked the information provided in this Course Specification and will endeavour to deliver this course in keeping with this Course Specification. However, changes to the course may sometimes be required arising from annual monitoring, student feedback, and the review and update of modules and courses.

Where this activity leads to significant changes to modules and courses there will be prior consultation with students and others, wherever possible, and the University of Portsmouth will take all reasonable steps to minimise disruption to students.

It is also possible that the University of Portsmouth may not be able to offer a module or course for reasons outside of its control, for example, due to the absence of a member of staff or low student registration numbers. Where this is the case, the University of Portsmouth will endeavour to inform applicants and students as soon as possible, and where appropriate, will facilitate the transfer of affected students to another suitable course.

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## Document details

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